

Developing a Uniform Monitoring Network for the Chesapeake Bay Watershed

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Cooperating Agencies

- ⊕ USGS
- ⊕ USEPA
- ⊕ Virginia DEQ
- ⊕ Maryland DNR
- ⊕ Delaware DNREC
- ⊕ West Virginia DEP
- ⊕ Pennsylvania DEP
- ⊕ New York State DEC
- ⊕ D.C. Department of Health
- ⊕ Susquehanna River Basin Commission

Problem

Chesapeake Bay impaired due to nutrients (N & P) and suspended sediment. If bay is not removed from 303d list by 2010, a TMDL will be implemented over the entire watershed.

Solution

Attain bay-wide nutrient and suspended sediment levels allowing the bay to be removed from the list of impaired waters prior to 2010.

General Approach

- ⊕ Determine criteria to define a clean bay
 - ◆ Water Clarity
 - ◆ Dissolved Oxygen
 - ◆ Chlorophyll A
- ⊕ Develop basin specific nutrient (N & P) and suspended sediment load caps
- ⊕ Develop tributary strategies to meet load caps
- ⊕ Implement tributary strategies
- ⊕ Monitor and assess success

Develop a Uniform Monitoring Network

Uses for Monitoring Network

Load calculation

-  Monthly + 8 storms

Trend analysis

-  5 years of monthly data

Watershed modeling

Monitor success of Bay restoration

Design Site Locations for Best Case Scenario Monitoring Plan

- ⊕ As many sites as possible
- ⊕ Spatially distributed
 - ◆ Tributary strategy basins
- ⊕ Representative of geographic characteristics
 - ◆ Stream characteristics
 - ☯ Hydrologic / biological / chemical
 - ◆ Basin characteristics
 - ☯ Geology / land use
 - ◆ Sources
 - ☯ High loading areas

Establish Uniform Sampling Regime

- ⊕ Constituents

- ◆ TN, TP, TSS, SS

- ⊕ Sample frequency

- ◆ Monthly base flow samples

- ◆ Storm samples

- ⊕ Sample technique

- ◆ Depth integrated

- ◆ Horizontally integrated

Compile Characteristics of Existing Monitoring Programs

- ⊕ Map existing sites
- ⊕ List existing monitoring regime
 - ◆ Constituents
 - ◆ Frequency
 - ◆ Technique

Compare Existing Monitoring with Best Case Scenario

- ⊕ Identify spatial data gaps
- ⊕ Identify sample regime gaps
- ⊕ Rank data gaps
 - ◆ Recognizing jurisdictional and watershed needs
- ⊕ Reallocate existing resources where possible
 - ◆ Relocating existing sites
 - ◆ Reallocating existing funding
- ⊕ Determine remaining gaps
 - ◆ New sites
 - ◆ Additional sampling
 - ◆ Additional parameters
- ⊕ Allocate additional funding as available

Final Pieces

- ⊕ Develop QA plan
- ⊕ Develop laboratory split sampling program
- ⊕ Develop MOU between agencies
- ⊕ Implement monitoring plan
- ⊕ Seek additional funding for gaps